Gemini Data Loggers

Tinyview Logger Manual

The name TINYVIEW covers a range of miniature dataloggers fitted with LCD display, capable of recording and displaying readings. TINYVIEW offers many features including:

- 14992 Reading capacity
- LCD display: 4 digits plus indicators
- Logging intervals of 1 second to 10 days
- Programmable delayed and trigger start
- Off-load whilst logging
- Min/Max/Actual readings
- Two programmable alarms
- 3 Stop options
- Manufactured to BS EN ISO9002
- Complies with EN 50082 Pt1&2: 1992/95

TV-0020 TV-0050 TV-0073 TV-0076
TV-0104 TV-0204 TV-0304

9800-4346 Iss. 3 E&OE.

WARNINGS

If this equipment is installed or used in a manner not specified by the manufacturer then the protection provided by the equipment may be impaired.

This equipment contains a lithium battery which must not be cut open, incinerated, exposed to temperatures above 85°C (185°F) or recharged. Dispose of in accordance with local regulations.

The lithium battery should be replaced by a trained technician using the battery supplied in the appropriate manufacturer s service pack.

This equipment should only be interfaced to a UL or CSA listed computer.

This equipment should only be interfaced to equipment which is powered by a Safety Extra Low Voltage Supply. The maximum voltage levels are to be 30Vrms, 42V peak or 60V dc and separated from hazardous voltages by double or reinforced insulation. For the United States consider a Safety Extra Low Voltage Supply to be a Class 2 source as defined in the National Electrical Code. It the unit is connected to a computer outdoors the computer must also comply.

This equipment is safe to use indoors or outdoors over the temperature range 40°C to 85°C (-40°F to 185°F).

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FEATURES

Reading Capacity

TINYVIEW stores 14992 data readings, along with related information such as the logging interval and description/title, together with details of the individual logger including the unique serial number.

Delayed and Trigger Start

The logger may be programmed to delay the start of the logging cycle by up to 45 days. The delay can be set as relative or actual time and will have full date/time retention. A clock face symbol on the display indicates that the logger is set for delayed start. Alternatively, it may be set to start logging when a magnet is applied to the case. This is indicated by arrows on the screen pointing to where the magnet must be applied.

Logging Intervals

The logging interval can be specified in either seconds or minutes. The seconds mode can be set up to 4.5 hours, the minutes mode up to 10 days. Certain features are only available in

minutes mode. An arrow on the display points to a graph symbol when the unit is logging.

Off-load While Logging

When the logging interval is specified in minutes it is possible to retrieve data from a TINYVIEW without interrupting the logging program.

Stop Options

TINYVIEW may be set to stop logging in one of three ways:

i. Never (wraparound). In this mode the logger continues to record, over-writing the oldest data first once full.
ii. When full.
iii. After a specified number of readings.

Minimum, Maximum or Actual Readings

It is possible to record minimum, maximum or actual readings. For minimum and maximum readings, the recorded value is calculated from readings taken during the logging interval. Therefore a minimum logging interval of 2 minutes is needed for these functions.

Alarms

TINYVIEW has two programmable alarms. Both use the LCD display to show an alarm state. Both are fully programmable for:

i. Alarm trip point
ii. Over or under value.
iii. Latching or non-latching.

Alarm status is shown by the presence of Lo1, Lo2, Hi1 and Hi2 indicators at the top of the LCD. These can be cleared via the Windows software without interrupting the logging.

Display

Numerical reading: Actual temperature or Relative Humidity level. For temperature, an arrow pointing to the bottom of the display indicates the units used (degrees Centigrade or Fahrenheit). The display is updated every 4 seconds.

Word STOP : Logger in stop mode.

Display blank: In stop mode the logger turns the display off after 5 minutes to preserve battery life. When you connect to the logger in GLM the display turns on again.

Word CAL : Indicates that the logger is due or nearly due for calibration. This will only appear on calibrated units and will not stop the logger functioning. The word CAL will also appear on calibrated units for a few seconds each time the battery is inserted. Uncalibrated units will display BATT instead.

MANAGING SOFTWARE

Logging is started and the data retrieved by means of the management software (GLM) which is run on a Windows based host computer. In order for TINYVIEW units to communicate with the host computer, the correct interface cable is required for connection between a spare serial port on the computer and your TINYVIEW data logger (part number CAB-0007). Should any difficulty be experienced in communicating with the unit, firstly check that the cable is properly connected to the correct serial port. Please read the GLM manual before using your TINYVIEW data logger.

Exporting Data

Data may be exported from the software in text formats ready for importing into spreadsheet or other programs. Exported data may include the title, description and other headings.

CARE OF UNIT

General

Care must be taken to ensure that no dirt or moisture gets into any connector. Moisture will cause the unit to stop recording and can lead to corrosion. Do not open the unit for any purpose other than to change the battery, particularly with RH units, as calibration may be affected. Where the unit has been used in cold conditions, allow it to warm to room temperature prior to opening to avoid condensation forming inside.

IP Ratings

TINYVIEW loggers are rated IP65 splashproof, but only when connector caps are securely fitted. In RH models, the sensor is necessarily only protected to IP20.

Battery (Observe warnings inside cover)

Size: 3.6v ½AA size Lithium

Life: Up to 1 year for PT100, 2 years for other types.

Battery replacement is recommended at least yearly for PT100 and every 2 years for the other types. A Service kit including battery, O-ring seal and silica gel pack is available from your TINYVIEW distributor, Part No. SER-9550.

Always stop the unit logging before changing the battery. To open the unit, unscrew the lid from the base. Care should be taken when handling the unit once the lid is removed, since it may be damaged by static electricity.

Check that the replacement is aligned with markings on battery holder. The word batt will appear on the display for a few seconds, followed by the word stop . If it does not, remove the battery and try again. When replacing the battery, it is recommended that the rubber seal and silica gel pack are also replaced (see above). When refitting the lid ensure that the electronics are seated properly and that no wires are trapped.

To maximise battery life, use longer logging intervals (in minutes mode) if possible, and do not leave the logger connected to the host computer for long periods. Low temperatures also reduce battery life.

SPECIFICATION

Physical Dimensions

Basic diameter:	60mm / 2.36
Length (Int. sensor):	88mm / 3.46
Length (Ext. sensor):	84mm / 3.31
Length (Stab probe):	150mm / 5.91
Width (Int. sensor):	65mm / 2.56
Width (others):	76mm / 2.99
Depth:	35mm / 1.38
Weight (Stab probe):	100g / 3.53 oz. (approx.)
Weight (others):	85g / 3 oz. (approx.)

EMC environment

The operating environment for TINYVIEW is as defined in EN50081 pt1: 1992 and EN50082 pt1&2: 1992/95. TINYVIEW complies with EMC generic immunity standard EN50082 pt1&2: 1992/95 with any standard leads or sensors supplied. User-supplied leads and sensors may affect this compliance. Some degradation in accuracy of the logged variable may occur if the unit is subject to RF electromagnetic disturbance (as per generic immunity standard EN50082 pt 1&2: 1992/95).

TINYVIEW Temperature

Operating Temperature

TINYVIEW range G and H loggers are designed to operate over a temperature range of -40°C to +85°C (-40°F to +185°F). The unit may be permanently damaged if operated outside this range. See also battery warnings at the front of this manual. The measuring range can be extended by using the external probe version.

TINYVIEW TEMP Sensor ranges

TINYVIEW Temperature loggers use 10K NTC Thermistors. Ranges available are:

Range G -40°C to +125°C (-40°F to +185°F)

Range H -30°C to +50°C (-22°F to +122°F)

Approximate Thermal Time Constants

Internal sensor: 10 min. in moving air

Stab sensor: Less than 1 min. in water

Probe sensor: See probe data sheets.

Accuracy and Resolution

Sensor Accuracy

Internal and Stab sensor loggers:

± 0.2°C From 0°C to 70°C

(±0.36°F from 32°F to 158°F)

See probe data sheets for probe sensor accuracy.

Logger Resolution

Range G 0.4°C at +25°C (0.72°F at 77°F)

Range H 0.25°C at 0°C (0.45°F at 32°F)

TINYVIEW PT100 and PT1000 Loggers

Operating Temperature

TINYVIEW PT100 units are designed to operate over a temperature range of 0°C to +85°C (32°F to 185°F), and PT1000 units have an operating range of -40°C to +85°C (-40°F to 185°F). The unit may not work properly if operated outside this range. See also battery warnings at the front of this manual.

Sensor Range

The standard range for TINYVIEW PT100 loggers is -50°C to +300°C (-58°F to +572°F), and for PT1000 loggers it is 200°C to +100°C (-328°F to +212°F) (probe tip temperature).

Temperatures below -40°C (-40°F) or above +200°C (392°F) at the back of the probe may cause damage to sleeving and reduce accuracy.

Logger Resolution

PT100: 1°C at 0°C (1.8°F at 32°F)

PT1000: 0.45°C at -200°C (0.7°F at -328°F)

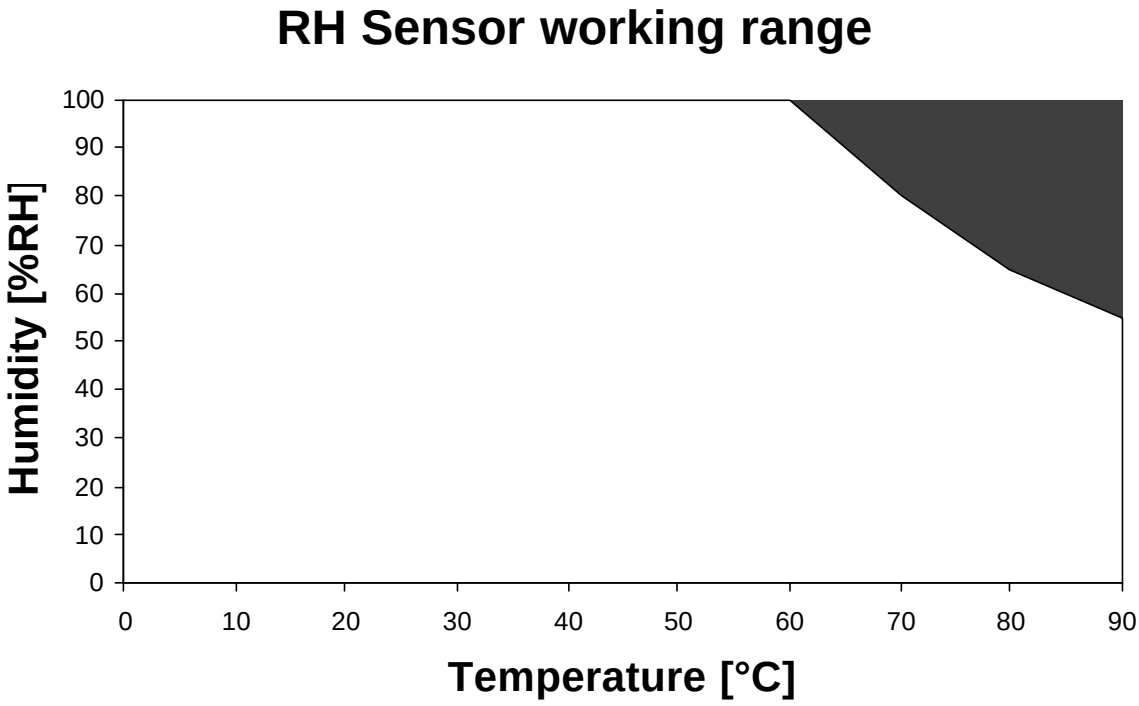
PT Sensor Accuracy & Response time

Please refer to the relevant probe data sheet.

TINYVIEW RH LOGGERS

Operating Range

0% to 95% RH (Non-condensing) between -20°C and +85° C (-4°F to +185°F), but see sensor working range below.



Accuracy and Resolution

± 3% RH at 25°C (77°F).

Temperature Dependency is low.

Resolution is better than 0.5% RH.

Response Time

Less than 10 seconds to 90% in a non-condensing atmosphere. If wetted the sensor may take up to 30 minutes to recover.

The RH sensor

The sensor is necessarily exposed and therefore care must be taken not to cause damage. It may be gently cleaned in de-ionised water or pure isopropanol but NOT abrasive cleaners. Any scratch or residue on the delicate surface of the sensor will affect the accuracy of readings. It is recommended that the unit is checked for re-calibration every six months.

Chemical Resistance

The sensor will resist chemical attack by small amounts of the following vapours or gases: Carbon monoxide, Ammonia, Sulphur dioxide, Chlorine, Formaldehyde, Ethylene oxide, Freon, Hydrogen chloride, Hydrogen fluoride, Nitrogen dioxide, Ethanol, Methanol, Ozone, Isopropanol, Methyl chloride and Hydrogen peroxide. It also offers resistance to ultraviolet rays. Permanent sensor degradation may be caused by contact with substances such as

salt solution, which can crystallise within the porous layers of the sensor affecting local moisture levels there, and hence readings.

CALIBRATION

For critical applications, TINYVIEW can be supplied with a traceable calibration certificate. All calibrated units are fitted with a tamper-proof seal and re-calibration date label. To assist you in maintaining calibration, all TINYVIEWs that have been calibrated will warn you when re-calibration date falls due by showing the word CAL on the display every few seconds. This calibration warning can only be cleared by returning the unit to your supplier for calibration cancellation or an approved Calibration Service, which also includes battery and O-ring replacement, re-sealing and dating.

The period for which a calibration is valid will depend upon the type of logger.

Please note that the Manufacturers Warranty is NOT extended by the Calibration Service.

NOTES

APPROVALS

This equipment complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause any harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

TINYVIEWs conform to:

EN 50081 pt1:1992

EN 50082 pt1&2:1992/95

Manufactured within the Orion Group to:
ISO EN 9002 part 2. (Cert. No 6134)

WARRANTY

TINYVIEW units carry a manufacturing defects warranty of 12 months from the date of purchase. Units returned under warranty will be repaired or replaced at the manufacturer s discretion. This warranty does not cover mishandling, modification or battery replacement and is subject to the standard Terms and Conditions of Sale, a copy of which is available upon request.

Note: The equipment/goods are sold "as is" and with "all faults".

Claims under warranty should be referred to the point of sale. Tinytag and Tinyview are regd. trade marks.

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